

CLAIMS

1. A device for reduction of organic Sulphur from high Sulphur coal which comprises a reactor essentially consisting of three heating zones such as steam heating zone capable of maintaining a temperature in the range of 450-500 degree centigrade, a promoter zone capable of maintaining a temperature of the order of 950-1100 degree centigrade and reaction zone capable of maintaining a temperature in the range of 900-950 degree centigrade, the said reactor being placed inside a tubular furnace capable of providing the above said temperature zones in the said reactor, the said furnace with reactor inside being enclosed in a movable cabinet, the said reactor and furnace being provided with known energy regulators and indicators.
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2. A device as claimed in claim 1 wherein the tubular furnace is made up of Silliminite and insulated by quartz wool.
3. A process for removal of organic sulphur from high sulphur coal using the device as claimed in claim 1-2, which comprises heating the promoter zone (containing the promoter) at a temperature in the range of 1100 ± 50 degree Celsius and steam zone at a temperature in the range of 450 to 500 degree Celsius, crushing the input coal to -72 mesh BS and feeding into the reaction zone, producing steam in a flask, preferably made of glass and passing through the reactor, maintaining the temperature at 900 degree Celsius for about 1 hour, after it attains a temperature of about 900 degree Celsius, passing the gas evolved from the reactor through a series of bubblers, preferably made of glass, containing ammoniacal cadmium chloride solution, cooling the furnace to room temperature and discharging the product coke/char.
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4. A process as claimed in claim 3, wherein the promoter used is mixture of copper-iron turnings in the ratio of 1:9.
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5. A process as claimed in claims 2 – 4, wherein the rate of rise in temperature in promoter zone and reaction zone is 5 degree Celsius per minute.
6. A process as claimed in claim 2-5 wherein around 80% sulphur from the coal is removed by the process.